

Claims

5 1. A method for providing user specific adaptive voice feedback in a multi-level speech recognition driven system, comprising the steps of:

detecting whether a user of the speech recognition driven system has provided a voice input; 7:49-51

determining whether a voice input is associated with a specific user that is recognized by the speech recognition driven system; 22:52-54

providing adaptive voice feedback to the user when the user has not provided a voice input for a predetermined user specific time period; 20:10-15

10 determining whether the voice input provided by the user is recognized by the speech recognition driven system; and 23:34-43

performing a speech selectable task when the voice input provided by the user corresponds to a speech selectable task that is recognized by the speech recognition driven system. 23:43-45, 24:1-5

2. The method of claim 1, further including the steps of:

tracking the number of times in which the user has failed to respond for the predetermined user specific time period at a given level; and 14:52-57

5 deactivating the speech recognition driven system when the user has failed to respond for a user specific set number of the predetermined user specific time periods at the given level.

3. The method of claim 2, wherein if a voice input is not associated with a specific user the predetermined user specific time period and the user specific set number of the predetermined user specific time periods are set to default values. - default set to 1

4. The method of claim 2, wherein the speech recognition system utilizes voice recognition technology in determining whether a voice input is associated with a specific user.

for the purpose of the system to allow grant user access to the system in a handsbusy environment

5. The method of claim 4, wherein the predetermined user specific time period and the user specific set number of the predetermined user specific time periods are adjusted by the speech recognition driven system as the ability of a specific user changes. 10:21-46

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6. The method of claim 5, wherein a neural network is utilized to adjust the predetermined user specific time period and the user specific set number of the predetermined user specific time periods when the ability of a specific user changes.

7. The method of claim 5, wherein fuzzy logic is utilized to adjust the predetermined user specific time period and the user specific set number of the predetermined user specific time periods when the ability of a specific user changes.

8. The method of claim 1, further including the step of:  
deactivating the speech recognition driven system when the voice input from the user is not recognized by the speech recognition driven system.

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9. The method of claim 1, wherein the adaptive voice feedback provided to the user is level dependent. 10:21-46

10. The method of claim 1, further including the step of:  
activating the speech recognition driven system.

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11. The method of claim 10, wherein the speech recognition driven system is switch activated. P - 5:51-52

12. The method of claim 10, wherein the speech recognition driven system is voice activated. P > 5:51-53

13. The method of claim 2, wherein the predetermined user specific time period and the user specific set number of predetermined user specific time periods are level dependent. 10: 21-46

14. The method of claim 2, wherein the predetermined user specific time period and the user specific set number of predetermined user specific time periods are dialog branch dependent. 19: 66-67  
20: 29-49

15. The method of claim 1, wherein the speech selectable task is performed by a motor vehicle accessory.

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16. A multi-level speech recognition driven system for providing user specific adaptive voice feedback, comprising:

a memory subsystem for storing information;

a processor coupled to the memory subsystem;

an audio input device coupled to the processor, the input device receiving a voice input from a user;

an audio output device coupled to the processor, the output device providing adaptive voice feedback to the user; and

speech recognition code for causing the processor to perform the steps of:

detecting whether a user of the speech recognition driven system has provided a voice input;

determining whether a voice input is associated with a specific user that is recognized by the speech recognition driven system;

providing adaptive voice feedback to the user when the user has not provided a voice input for a predetermined user specific time period;

determining whether the voice input provided by the user is recognized by the speech recognition driven system; and

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performing a speech selectable task when the voice input provided by the user corresponds to a speech selectable task that is recognized by the speech recognition driven system.

17. The system of claim 16, wherein the speech recognition code causes the processor to perform the additional steps of:

tracking the number of times in which the user has failed to respond for the predetermined user specific time period at a given level; and

5       deactivating the speech recognition driven system when the user has failed to respond for a user specific set number of the predetermined user specific time periods at the given level.

18. The system of claim 17, wherein if a voice input is not associated with a specific user the predetermined user specific time period and the user specific set number of the predetermined user specific time periods are set to default values.

19. The system of claim 17, wherein the speech recognition system utilizes voice recognition technology in determining whether a voice input is associated with a specific user.

20. The system of claim 19, wherein the predetermined user specific time period and the user specific set number of the predetermined user specific time periods are adjusted by the speech recognition driven system as the ability of a specific user changes.

21. The system of claim 20, wherein a neural network is utilized to adjust the predetermined user specific time period and the user specific set number of the predetermined user specific time periods when the ability of a specific user changes.

22. The system of claim 20, wherein fuzzy logic is utilized to adjust the predetermined user specific time period and the user specific set number of the predetermined user specific time periods when the ability of a specific user changes.

23. The system of claim 16, wherein the speech recognition code causes the processor to perform the additional step of:

deactivating the speech recognition driven system when the voice input from the user is not recognized by the speech recognition driven system.

~~24.~~ The system of claim 16, wherein the adaptive voice feedback provided to the user is level dependent.

25. The system of claim 16, wherein the speech recognition code causes the processor to perform the additional step of:

activating the speech recognition driven system.

26. The system of claim 25, wherein the speech recognition driven system is switch activated.

27. The system of claim 25, wherein the speech recognition driven system is voice activated.

28. The system of claim 17, wherein the predetermined user specific time period and the user specific set number of the predetermined user specific time periods are level dependent.

29. The system of claim 17, wherein the predetermined user specific time period and the user specific set number of predetermined user specific time periods are dialog branch dependent.

30. The system of claim 16, wherein the audio input device is a microphone.

31. The system of claim 16, wherein the audio output device is a speaker.

32. The system of claim 16, wherein the speech selectable task is performed by a motor vehicle accessory.

5 33. A multi-level speech recognition driven system for controlling motor vehicle accessories that provides user specific adaptive voice feedback, comprising:

a memory subsystem for storing information;  
a processor coupled to the memory subsystem;  
a motor vehicle accessory coupled to the processor;  
an audio input device coupled to the processor, the input device receiving a voice input from a user;

10 an audio output device coupled to the processor, the output device providing adaptive voice feedback to the user; and

speech recognition code for causing the processor to perform the steps of:

detecting whether a user of the speech recognition driven system has provided a voice input;

15 determining whether a voice input is associated with a specific user that is recognized by the speech recognition driven system;

providing adaptive voice feedback to the user when the user has not provided a voice input for a predetermined user specific time period;

20 determining whether the voice input provided by the user is recognized by the speech recognition driven system; and

controlling the motor vehicle accessory according to a speech selectable task when the voice input provided by the user corresponds

25 to a speech selectable task that is recognized by the speech recognition driven system.

34. The system of claim 33, wherein the speech recognition code causes the processor to perform the additional steps of:

tracking the number of times in which the user has failed to respond for the predetermined user specific time period at a given level; and

5 deactivating the speech recognition driven system when the user has failed to respond for a user specific set number of the predetermined user specific time periods at the given level.

35. The system of claim 34, wherein if a voice input is not associated with a specific user the predetermined user specific time period and the user specific set number of the predetermined user specific time periods are set to default values.

36. The system of claim 34, wherein the speech recognition system utilizes voice recognition technology in determining whether a voice input is associated with a specific user.

37. The system of claim 36, wherein the predetermined user specific time period and the user specific set number of the predetermined user specific time periods are adjusted by the speech recognition driven system as the ability of a specific user changes.

38. The system of claim 37, wherein a neural network is utilized to adjust the predetermined user specific time period and the user specific set number of the predetermined user specific time periods when the ability of a specific user changes.

39. The system of claim 37, wherein fuzzy logic is utilized to adjust the predetermined user specific time period and the user specific set

number of the predetermined user specific time periods when the ability of a specific user changes.

40. The system of claim 33, wherein the speech recognition code causes the processor to perform the additional step of:

deactivating the speech recognition driven system when the voice input from the user is not recognized by the speech recognition driven system.

~~41. The system of claim 33, wherein the adaptive voice feedback provided to the user is level dependent.~~

42. The system of claim 33, wherein the speech recognition code causes the processor to perform the additional step of:

activating the speech recognition driven system.

43. The system of claim 42, wherein the speech recognition driven system is switch activated.

44. The system of claim 42, wherein the speech recognition driven system is voice activated.

45. The system of claim 34, wherein the predetermined user specific time period and the user specific set number of the predetermined user specific time periods are level dependent.

46. The system of claim 34, wherein the predetermined user specific time period and the user specific set number of predetermined user specific time periods are dialog branch dependent.

47. The system of claim 33, wherein the audio input device is a microphone.



48. The system of claim 33, wherein the audio output device is a speaker.